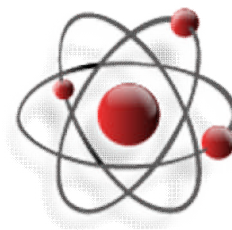


Name: _____ Date: _____
Chemistry

Worksheet



Matter Waves and Uncertainty

DESCRIBE the following terms.

diffraction –

matter waves –

DESCRIBE the contributions of the following men.

Louis De Broglie –

Erwin Schrodinger –

Werner Heisenberg –

DESCRIBE the following concepts.

De Broglie's hypothesis –

uncertainty principle –

THINK: What evidence supports the idea that an electron has wave properties?

SOLVE:

_____ Calculate the wavelength of a proton moving at a speed of 2.50×10^7 m/s.

$$1 \text{ proton} = 1.67 \times 10^{-27} \text{ kg}$$

$$1 \text{ joule} = 1 \text{ kg} \times \text{m}^2/\text{s}^2$$

"No-one has ever been able to define the difference between interference and diffraction satisfactorily. It is just a question of usage, and there is no specific, important physical difference between them." –Richard Feynman